

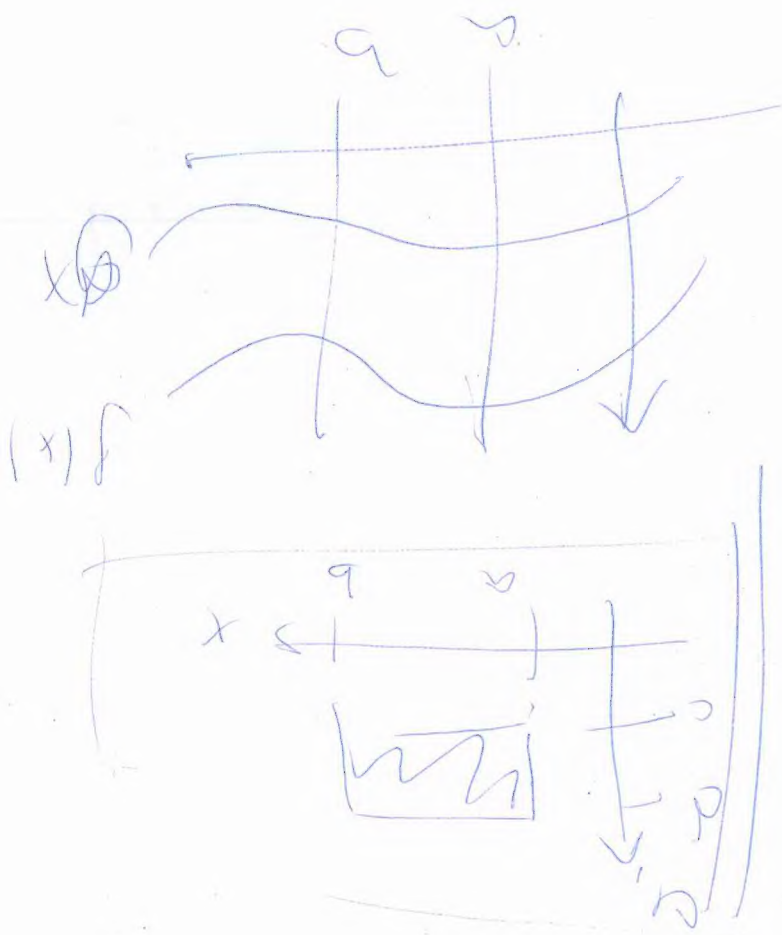
MATEMATIKAK I

2021eko abendua II

Izen-abizenak: _____ Talde zenbakia: _____

Oharra: Gogoratu funtzio esplizitu guztietarako izate-eremua definitzea.

1. Honako integral hau ebatzi: $\int x \cdot \sqrt[3]{x+1} \cdot dx$



$$\int_a^b \int_{g(x)}^{h(x)} f(x,y) dy dx$$

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$$\int_a^b f(x) dx = [F(x)]_a^b = F(b) - F(a)$$

2. Honako espresio matritziala sinplifikatu, A , B eta C matrizeak ordena berdineko matrize erregularrak direla suposatuz:

$$A^T \cdot (B \cdot A^T)^{-1} \cdot B \cdot A + A^{-1} - (B \cdot A)^{-1} \cdot B$$

3. Honako ekuazio linealen sistemak aztertu m eta n parametroen arabera, eta ahal den kasu guztietan ebatzi:

$$\begin{cases} x + 4y + z = n \\ 3x - y + 2z = 1 \\ 2x - 5y + m \cdot z = -2 \end{cases}$$

$$\frac{1}{2} \int_2^4 x^2 dx = \frac{1}{2} \left(\frac{x^3}{3} \right)_2^4 = \frac{1}{2} \left(\frac{64}{3} - \frac{8}{3} \right) = \frac{1}{2} \cdot \frac{56}{3} = \frac{28}{3}$$

$$\int_2^4 \frac{1}{x^2} dx = \int_2^4 x^{-2} dx = \left(-x^{-1} \right)_2^4 = \left(-\frac{1}{4} + \frac{1}{2} \right) = \frac{1}{4}$$

$$\ln \left[\frac{x^3}{3} \right]_2^4 = \ln 4 \left(\frac{8}{3} - \frac{1}{3} \right) = \frac{7}{3} \ln 4 //$$

$$x^2 \ln 4 = \left(\ln 4 - \ln 1 \right) = \ln 4 \quad \left[x^2 \ln 4 \right]_2^4 = \ln 4 \left(\frac{16}{2} - \frac{4}{2} \right) = \ln 4 \cdot 6$$

$$\int_2^4 x^2 \ln 4 dx = \ln 4 \int_2^4 x^2 dx = \ln 4 \left(\frac{x^3}{3} \right)_2^4 = \ln 4 \left(\frac{64}{3} - \frac{8}{3} \right) = \frac{56}{3} \ln 4$$